



## **I. INTRODUCTION**

Plaintiff Carnegie Mellon University (“CMU”) moves for Judgment as a Matter of Law on Marvell’s invalidity defenses. Marvell bears the burden of proving its invalidity defenses through clear and convincing evidence. *Microsoft Corp. v i4i Ltd. P’ship*, 131 S. Ct. 2238, 2248 (2011). Marvell presented expert testimony of Dr. Proakis to support two of its invalidity defenses—anticipation and obviousness—but that testimony is not sufficient to allow a reasonable jury to find invalidity. In particular, Dr. Proakis’ testimony is insufficient as a matter of law because: (1) his opinions regarding U.S. Patent No. 6,282,251 (the “Worstell patent”) (Ex. DX-187) are directly contradicted by prior sworn declaration; (2) he applied an incorrect claim construction; and (3) his obviousness analysis consists solely of conclusory statements contradicted by Worstell himself. Regarding Marvell’s other invalidity defenses, it offered no evidence whatsoever. Accordingly, no reasonable jury could conclude that Marvell has proved any of its invalidity defenses by clear and convincing evidence and CMU is entitled to judgment as a matter of law.

## **II. LEGAL STANDARD**

### **A. General Standard for Granting Judgment as a Matter of Law**

Rule 50(a) provides that:

If during a trial by jury a party has been fully heard on an issue and there is no legally sufficient evidentiary basis for a reasonable jury to find for that party on that issue, the court may determine the issue against that party and may grant a motion for judgment as a matter of law against that party with respect to a claim or defense that cannot under the controlling law be maintained or defeated without a favorable finding on that issue.

Fed.R.Civ.P. 50(a)(1). Third Circuit (rather than Federal Circuit) authority governs this Court’s “denial or grant of a motion for JMOL.” *Agrizap, Inc. v. Woodstream Corp.*, 520 F.3d 1337, 1341 (Fed. Cir. 2008). The Federal Circuit—applying Third Circuit law and echoing Rule 50(a)—has held that a grant of JMOL is appropriate when “a party has been fully heard on an

issue during a jury trial and the court finds that a reasonable jury would not have a legally sufficient evidentiary basis to find for the party on that issue.” *Id.* at 1342 (citing Fed. R. Civ. P. 50(a)) (emphasis added); *see also Rothman v. Target Corp.*, 556 F.3d 1310, 1316 (Fed. Cir. 2009) (same).

**B. Judgment as a Matter of Law on Invalidity Defenses**

Under 35 U.S.C. §282, a patent is presumed valid, and accordingly, invalidity must be established by clear and convincing evidence. *Microsoft Corp. v. i4i Ltd.*, \_\_\_ U.S. \_\_\_, 131 S.Ct. 2238, 2242 (2011). “Clear and convincing evidence is such evidence that produces ‘an abiding conviction that the truth of [the] factual contentions are ‘highly probable.’” *ActiveVideo Networks, Inc. v. Verizon Communications, Inc.*, 694 F.3d 1312, 1327 (Fed. Cir. 2012) (affirming JMOL of no anticipation and nonobviousness).

In *ActiveVideo*, the Federal Circuit found that there was insufficient evidence for a jury to reasonably find the patents were anticipated where the expert failed to explain how the prior art met each and every element of the claims. *Id.* at 1328 – 1329. The Federal Circuit has also held that a plaintiff is entitled to Judgment as Matter of Law where the defendant only offers conclusory testimony that fails “to analyze and explain the claim language and which components of the prior art embodied each element of the asserted claims.” *NTP, Inc. v. Research In Motion Ltd.*, 418 F.3d 1282, 1325 (Fed. Cir. 2005) (conclusory expert testimony is insufficient to meet the “high burden of clear and convincing evidence with respect to anticipation and obviousness.”); *ActiveVideo*, 694 F.3d at 1327 (“[T]he obviousness testimony by [defendant’s] expert was conclusory and factually unsupported.”).

### III. ARGUMENT

A. **There Is Not Substantial Evidence of Anticipation Because Dr. Proakis Admitted that the Worstell Patent Does Not Disclose Selection or Application of a Signal-Dependent Branch Metric Function**

On both direct and cross examination, Dr. Proakis opined that his version of Worstell's "further modified" metric (the so-called "transition noise adjustment") converted Worstell's Equation 20 into a set of signal dependent branch metric functions. *See e.g.*, Tr. 12/17/12 at 60, 67, 82-83. During cross-examination, CMU asked Dr. Proakis about a demonstrative slide he prepared showing the disparate way in which the Worstell patent treats the "blue" or transition branches and the "orange" or non-transition branches. Tr. 12/17/12 at 92-93 (addressing "Demo 12-15"). Dr. Proakis testified that the transition branches can be called "the one branches," and the non-transition branches can be called the "zero branches." *Id.* at 93. Dr. Proakis then admitted that the Worstell patent teaches only modifying "the one branches" with the transition noise adjustment *Id.*

Based on this view of Worstell, Dr. Proakis conceded, on cross-examination, that the Worstell patent does not disclose application of any signal-dependent branch metric function to the "zero branches." *Id.* at 94. In particular, when asked on multiple occasions whether Worstell discloses application of a signal-dependent branch metric function to each branch, Dr. Proakis testified that it would be "obvious" to apply such a function to the zero branches. *Id.* at 94:5-7, *id.* at 94:15-17; *id.* at 94:24-95:1; *id.* at 95:6-9. As Dr. Proakis knows, referring to a missing limitation as "obvious" is an admission that the particular limitation is not disclosed in the cited art. Accordingly, Dr. Proakis' testimony establishes, as a matter of law, that Worstell does not disclose selecting a branch metric function from a set of signal-dependent branch metric functions as required by claim 4 of the '839 patent and claim 2 of the '180 patent. Because anticipation requires disclosure of every claim element, Marvell's anticipation defense fails and no reasonable jury could find Marvell has established invalidity by anticipation by clear and convincing evidence. Accordingly, CMU is entitled to judgment as a matter of law.

**B. Marvell's Anticipation and Obviousness Defenses Are Legally Insufficient Because They Rest Upon an Incorrect Claim Construction and are Opinions the Jury Should Not Consider Because they are Contradicted by Dr. Proakis' Report and Prior Sworn Testimony**

A claim is anticipated only when “each and every limitation is found either expressly or inherently in a single prior art reference.” *Celeritas Techs., Ltd. v. Rockwell Int'l Corp.*, 150 F.3d 1354, 1361 (Fed.Cir.1998). Marvell relies exclusively on the testimony of its expert Dr. Proakis in arguing that the “Worstell patent” (Ex. DX-187) discloses each limitation in claim 4 of the ‘839 patent and claim 2 of the ‘180 patent. Dr. Proakis’ testimony on certain of the claim limitations, however, is not competent evidence. In particular, Dr. Proakis’ testimony that the Worstell patent discloses a “set of signal-dependent branch metric function[s]”<sup>1</sup> is directly contradicted by paragraph 34 of his sworn declaration (P-Demo 17), which was incorporated by reference into his expert report. As shown in CMU’s motion to strike the testimony of Dr. Blahut, experts may not testify regarding opinions contrary to those set forth in their reports. *See e.g., Kimberly-Clark Worldwide, Inc., v. First Quality Baby Prods., LLC*, No. 1:09-cv-1685, 2012 U.S. Dist. LEXIS 165100, at \* 18 (M.D. Pa. Nov. 19, 2012) (striking new invalidity defense because it was “raised so late in the litigation process [that] it would substantially prejudice [Plaintiff]”); *Jarrow Formulas, Inc. v. NOW Health Group, Inc.*, No. CV 10-8301, 2012 WL 3186576, at \* 16 (C.D. Cal. Aug. 2, 2012); *see also* Dkt. 717.

Because Dr. Proakis’ testimony is contrary to that set forth in his prior sworn declaration (which was incorporated into his report), it should be stricken and cannot support a conclusion that Worstell discloses the step of selecting a branch metric function from a set of signal-dependent branch metric functions, as recited in the asserted claims of the CMU patents.

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<sup>1</sup> Tr. 12/17/12 at 67:5 – 67:20.

Because Marvell cannot show that Worstell discloses every limitation in the CMU patents, the Court should enter judgment as a matter of law against Marvell on its anticipation defense.

1. Dr. Proakis' Testimony That There Is a Set of Functions Is Not Competent—and Should Be Stricken—Because Dr. Proakis' Report and Sworn Declaration Contradict That Opinion

Dr. Proakis' expert report, at ¶ 34, incorporates by reference a declaration he submitted, under penalty of perjury on November 2, 2011:

34. I previously discussed the interpretation of the word “function” in my Declaration filed on November 2, 2011, Dkt. No. 318-3. I incorporate that discussion by reference.

Proakis Report ¶ 34. In that declaration, Dr. Proakis applied the Court's construction of the term “function” which is “a mathematical relation that uniquely associates members of a first set with members of a second set.” Proakis Decl. ¶ 15, Dkt. 318-3 (applying the Court's construction of function). He also applied the agreed construction of the term “selecting” which means “to choose one from a set of more than one.” Proakis Decl. ¶ 20.

In particular, Dr. Proakis opined that “[b]ased on the Court's construction of ‘function,’ Worstell's ‘further modified’ branch metric is a *single branch metric function* and not a ‘set’ of *branch metric functions*.”

34. Based on the Court's construction of “function,” Worstell's “further modified” branch metric is a “single” branch metric function and not a “set” of branch metric functions.

Proakis Decl. ¶ 34. Dr. Proakis further testified in his declaration that, if Worstell does not

disclose a set of functions, it does not disclose the “selecting” step taught by claim 4 of the ‘839 patent and claim 2 of the ‘180 patent. *Id.* ¶ 20.

At trial, however, Dr. Proakis testified that Worstell does disclose a “set of branch metric functions.” Tr. 12/17/12 at 67:9 – 67:20 (“the selecting step requires that there be a set of branch metric functions from which we select in order to take into account signal dependent noise. And that part, that element of this claim is actually disclosed at these Bs; the branch metrics are, in fact, set because these sigmas here are different for different branches.”).

As the Court ruled during the side bar conference, Dr. Proakis and Marvell are “bound by the position [Marvell] took in front of the Court.” Tr. 12/17/12 at 111; *see also Pritchard v. Dow Agro Scis.*, 263 F.R.D. 277, 284-85 (W.D. Pa. 2009) (Fischer, J.) (“[N]ew opinions or information which is contradictory to that set forth in the expert report” should be stricken); *Jarrow Formulas, Inc. v. NOW Health Group, Inc.*, 2012 WL 3186576, at \*16 (C.D. Cal. Aug. 2, 2012); *Rembrandt Vision Techs., L.P. v. Johnson & Johnson Vision Care, Inc.*, 282 F.R.D. 655, 665 (M.D. Fla. 2012). *See generally* Dkt. 717 at 7-11 (discussing authority prohibiting testimony of changed opinions and requiring such testimony to be stricken unless Marvell demonstrates a lack of prejudice to CMU).

Because Dr. Proakis’ sworn declaration, and his expert report, indicate that Worstell does not disclose a set of signal dependent branch metric functions, it does not disclose the “selecting” step in claim 4 of the ‘839 patent and claim 2 of the ‘180 patent. Federal Rules of Civil Procedure 26 and 37, and the Court’s orders, prohibit Dr. Proakis from changing his testimony at this late date. At a minimum, such directly contradictory sworn testimony cannot meet the clear and convincing standard. Accordingly, Marvell cannot prove that Worstell anticipates this limitation, and Marvell’s anticipation defense fails as a matter of law.

2. Dr. Proakis Applied an Incorrect Construction of “Signal-Dependent Branch Metric Function”

The Court construed the term “signal-dependent branch metric function” as “a ‘branch metric function’ that accounts for *the* signal-dependent *structure* of the media noise.” Dkt. 176, at 2 (emphasis added). “Signal-dependent noise” was construed to mean “media noise in the readback signal whose noise structure is attributable to a specific sequence of symbols (e.g., written symbols).” *Id.* Thus, a signal-dependent branch metric function must account for the media noise in the readback signal whose noise structure is attributable to a specific sequence of (written) symbols. Dr. Proakis did not apply that construction. Instead, he simply looked at whether the branch metric functions in the Worstell patent “take into account signal dependent noise.” Tr. 12/17/12 at 54; *see also id.* at 59 (asking Dr. Proakis whether there is an equation in the Worstell patent that “takes into account the concept of correlated noise”). Dr. Proakis repeated the error even after he testified that he was applying the Court’s claim constructions. *Id.* at 67 (“[T]he selecting step requires that there be a set of branch metric functions from which we select in order to take into account signal dependent noise.”). There is a significant difference between the claim requirements of claim 4 and claim 2 of the CMU patents, whose signal dependent branch metric functions account for the media noise in the readback signal whose noise structure is attributable to a *specific sequence* of (written) symbols, and an invention that merely “take[s] into account” that noise.

It is well established that the Court must “disregard the testimony of [an] expert . . . based on an incorrect understanding of the claim construction.” *Cordis Corp. v. Boston Scientific Corp.*, 658 F.3d 1347, 1357-58 (Fed. Cir. 2011) (affirming the District Court’s grant of JMOL based on an expert’s testimony when that testimony was based on a faulty understanding of the Court’s claim construction); *see also TI Group Automotive Systems, NA, Inc. v. VDO North*

*America, LLC*, 2002 WL 31051602 at \*4, \*9 (D. Del. Sept. 4, 2002) (setting aside jury verdict because expert testified using construction of claim language that had been advanced earlier and that the District Court had not adopted); *DataTreasury Corp. v. Wells Fargo & Co.*, 2010 WL 5140732 at \*6 (E.D. Tex. Sept. 27, 2010) (granting judgment as a matter of law because the only evidence in support of the jury's verdict was expert testimony that was "outside of the Court's claim construction and thus as a matter of law cannot support the jury's finding . . .").

Because Dr. Proakis applied a construction of "signal-dependent branch metric function" that merely looks at whether signal-dependent noise is accounted for, as opposed to whether media noise in the readback signal whose noise structure is attributable to a specific sequence of (written) symbols is accounted for, his analysis is contrary to the Court's construction, and his opinion is not competent evidence. Consequently, Marvell failed, as a matter of law, to demonstrate that Worstell discloses that limitation.

**C. There Is Not Substantial Evidence of Obviousness Because Dr. Proakis' Obviousness Opinion Is Based Solely on Conclusory Testimony That a PHOSITA Would Supply the Elements Not Present in Worstell**

The Federal Circuit repeatedly has held that conclusory expert testimony, of the type Dr. Proakis provided, is not sufficient to support an obviousness defense: "At this critical point in the determination of obviousness, there must be factual support for an expert's conclusory opinion." *Upjohn Co. v. Mova Pharm. Corp.*, 225 F.3d 1306, 1311 (Fed. Cir. 2000) (citing *Motorola, Inc. v. Interdigital Technology Corp.*, 121 F.3d 1461, 1473 (Fed.Cir.1997); *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 294 (Fed.Cir.1985)). The Federal Circuit requires experts to articulate the reasoning for their obviousness conclusion and provide a specific factual basis. *Id.*; see also *Innogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363, 1373 (Fed. Cir. 2008) ("T]here must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness."); *NTP*, 418 F.3d at 1325 (affirming JMOL on

validity where the expert's conclusory testimony was "hardly enough to meet [defendant's] high burden of clear and convincing evidence with respect to anticipation and obviousness");

*ActiveVideo*, 694 F.3d at 1327 (expert "never provided any factual basis for his assertions.").

The Federal Circuit recently affirmed JMOL of nonobviousness where the expert's opinions on that point were conclusory and factually unsupported:

The expert failed to explain how specific references could be combined, which combination(s) of elements in specific references would yield a predictable result, or how any specific combination would operate or read on the asserted claims. ***Rather, the expert's testimony on obviousness was essentially a conclusory statement that a person of ordinary skill in the art would have known***, based on the . . . nature of the claimed components, how to combine any of a number of references to achieve the claimed inventions. This is not sufficient and is fraught with hindsight bias.

*ActiveVideo*, 694 F.3d at 1327. Similarly, in *Upjohn*, the expert summarily testified that a PHOSITA would know to use the missing element, but the court found no evidence in the record to support that statement and ultimately held that there was "not substantial evidence to support the findings necessary to sustain a verdict of obviousness." *Id.* at 1311-12 ("The record does not contain substantial evidence in support of [the expert's] conclusion that it would have been obvious to make this change. . . ."). In *Innogenetics*, the Federal Circuit again found an expert's list of prior art references and conclusion that "to one skilled in the art it would have been obvious" was deficient. 512 F.3d at 1373. The Federal Circuit noted that the *Innogenetics* expert failed to explain how or why a PHOSITA would have found the claims obvious and warned that "[s]uch vague testimony would not have been helpful to a lay jury in avoiding the pitfalls of hindsight that belie a determination of obviousness." *Id.* (citing *Graham v. John Deere Co.*, 383 U.S. 1, 36 (1966)).

As discussed above, Dr. Proakis all but agreed that the Worstell reference does not

disclose any “transition noise adjustment multiplier” on the non-transitional or “zero” branches. Tr. 12/17/12 at 94:1 – 95:17 In the process of doing so, however, without explanation—and without citing any other prior art or evidence—Dr. Proakis’ then summarily concluded that it would have been obvious to a PHOSITA to perform some undisclosed processing on those non-transitional “zero” branches. *Id.* at 94:7-94:8 (“***That is obvious, Mr. Greenswag. That is totally obvious to a person skilled in the art.*** There are 16 branches there, and a person skilled in the art would look at that and say, okay, I’ve got -- eight of these branches have to be scaled by a sigma one squared and the other eight have to be scaled by a sigma two squared.”); 94:17 – 94:23; 95:6 - 95:9; *see also id.* at 77:12 (“It’s obvious to a person of ordinary skill in the art.”).

Dr. Proakis did not, however, identify *how* or *why* a PHOSITA, reading Worstell, would know or be motivated to apply such a multiplication to the non-transitional “zero” branches. He also failed to identify any references teaching what these functions would be, let alone identify where in the prior art a PHOSITA would have looked.<sup>2</sup> This testimony falls far short of what is required to establish obviousness because Dr. Proakis failed to analyze the *Graham* framework or provide any “reason that would have prompted a person of ordinary skill in the art to combine the elements as the new invention does.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 401 (2007); *Graham*, 383 U.S. at 17 (“Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved.”); *see also Innogenetics*, 512 F.3d at 1373 (“Knowledge of a problem and motivation to solve it are entirely different from motivation to combine particular references to reach the particular claimed method.”).

Furthermore, the deficiencies in Dr. Proakis’ opinions are underscored by his failure to

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<sup>2</sup> In his deposition, Dr. Proakis expressly disclaimed the use of any combination of prior art in support of his obviousness analysis. *See* Dkt. 498 at 4.

even take into account an email from Glen Worstell after he had reviewed the CMU invention disclosure in which he expressly states: “A couple of years ago I did some work on a Viterbi detector modification to account for noise correlation. *This invention is related but goes beyond my work and is probably more interesting.*” PX-161; Tr. 12/17/12 at 97:16- 98:25 (testifying that he had seen the previously seen the email but didn’t remember discussing it).

In sum, Dr. Proakis’ conclusion of obviousness lacks any factual basis and is far from clear and convincing evidence upon which a jury could reasonably find that the CMU patents are invalid.

**D. The Court Should Enter Judgment Against Marvell on its Other Invalidity Defenses Because Marvell Offered No Evidence To Support Them**

Marvell’s only evidence in support of its invalidity defenses is the testimony of Dr. Proakis that the Worstell patent anticipates the CMU patents and renders them obvious. Marvell did not present any evidence regarding the other invalidity defenses set forth in Defendants’ Amended Answer and Counterclaims [Dkt. 116] ¶ 27 (April 29, 2010). Indeed, prior to trial, Mr. DeFranco indicated that Marvell no longer was pursuing its written description and indefiniteness defenses. *See* Nov. 20, 2012 email from Edward DeFranco to Lauren Sharkey. Marvell has not, however, formally dropped other invalidity defenses such as enablement. CMU is entitled to judgment as a matter of law on enablement and all other invalidity defenses on which Marvell did not present evidence.

**IV. CONCLUSION**

Marvell has not presented evidence sufficient to allow a reasonable jury to find, by clear and convincing evidence, that the CMU patents are invalid. Accordingly, CMU respectfully requests that the Court grant its Motion for Judgment as a Matter of Law on Marvell’s invalidity defenses.

Respectfully submitted,

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**CERTIFICATE OF SERVICE**

I hereby certify that on December 18, 2012 the foregoing was filed electronically. Notice of this filing will be sent to all parties by operation of the Court's electronic filing system.

Parties may access this filing through the Court's system.

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